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# United States Department of Agriculture,

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## RED CLOVER (*Trifolium pratense*).

This well-known leguminous forage plant needs no description. It is a native of the Old World, but is now extensively cultivated in all temperate climates. It rarely lasts more than two years, although strains have been developed which last considerably longer. Frequently stands may be kept up by allowing the clover to reseed itself. Red clover is grown throughout the northeastern quarter of the United States as far west as eastern Kansas, in the northern Rocky Mountain region, and the upper Pacific coast region.

It is excellent for pasture, hay, and soiling. As a soil improver in general farming, red clover is probably without a rival. In rotations it can be made to precede or follow almost any field crop. Besides yielding from one to two tons of hay per acre it leaves nearly two-thirds as much residue in the soil in the form of vegetable matter. This not only adds available plant food but also improves the texture and mechanical conditions of the soil.

**Varieties.**—There are two varieties on the market, ordinary or medium red and mammoth red clover. The latter is sometimes known as Sapling, Giant, Pea Vine, Soiling, and Perennial red clover. Mammoth clover is larger and coarser and matures from two to three weeks later than the ordinary clover. For this reason it is often preferred for seeding with timothy. It matures but one crop a year. In appearance the seeds of these two varieties are identical, so that one is never sure of the kind planted until it has made full growth.

**Soil Requirements.**—Red clover will grow successfully on a large variety of soils. Those best suited to its growth are deep well-drained clay loams and limestone soils, but in sections of frequent freezing and thawing in early spring, where this type is not well drained, the clover is liable to be heaved out. Moist sandy soils well supplied with humus also produce good crops of red clover, but it will not succeed well on dry sandy or porous gravelly soils. Unlike alsike clover it will not grow on soggy or wet peaty soils.

**Sowing.**—Red clover is usually sown in the early spring, though in western Oregon and Washington and in southern localities it may be sown in the fall. When sown alone from 10 to 15 pounds of seed are used, but when seeded in a mixture, as with timothy, from 8 to 12 pounds are sufficient.

Red clover is usually sown in a small grain crop. It is a common practice to sow timothy with wheat in the autumn and sow clover on the wheat in very early spring when the ground is honeycombed or checked by frost. This will give the seed a light covering and usually insure germination. Where covering can not be secured in this manner it may be done by light harrowing. It may also be sown with a spring-sown grain crop, such as oats. In this case it should always be given a light covering.

Where it is difficult to secure a stand in either of the above ways, seeding alone on well-prepared land in the spring in the North or fall in the South has given good results. In States from Ohio south, good results have been obtained by seeding in corn at the last cultivation.

**Harvesting the Seed.**—The largest yields of seed are secured from a medium stand of moderate growth. Throughout the North Atlantic States the common practice is to cut the second crop for seed. The first crop seeds less abundantly than the second. Sometimes larger yields of seed are obtained by pasturing until the first of June and then allowing the plants to go to seed. This is particularly true of mammoth clover.

The crop should be cut when nearly all the heads have turned brown or black. The cutting may be done with a mowing machine as ordinarily used for mowing hay or with a platform attachment to the cutter bar. The self-rake reaper is also used. When the mower is used the clover should be raked while damp and bunched to prevent shattering, and should be allowed to become thoroughly cured in the bunch or cock before thrashing. The thrashing is usually done with the clover huller. The common grain thrasher with the necessary attachments also gives good results.

**Clover Sickness.**—In Europe it has been recognized for a century or more that it is difficult to grow red clover continuously in short rotations. Some European writers state that on "clover sick land" at least six to eight years must elapse before another good crop of clover can be grown, others give four years. In this country the complaint that clover does not grow so well as formerly has been very common of late years.

The causes of this condition are not fully understood. In some instances in both Europe and America it has been found to be due to fungous diseases. The only apparent remedy for this is developing disease-resisting strains or keeping the land out of clover for a number of years. In Tennessee alsike clover appears to be immune to the disease found there. Clover is a heavy feeder on the potash and phosphates of the soil and sometimes its failure to grow is due to the lack of sufficient amounts of one, or both, of these elements. In this case an application of commercial fertilizers rich in these constituents may produce good crops. Sometimes soil may also become too acid for red clover and liming has in many cases given very satisfactory results. In some cases both lime and manure are required.

NICKOLAS SCHMITZ,  
Expert.

